CITY OF BRAZIL, INDIANA

ORDINANCE 4 - 2011

AN ORDINANCE TO AMEND CHAPTER 7 OF THE CITY OF BRAZIL, INDIANA CODE OF ORDINANCES TO ADD A NEW CHAPTER FOR THE CONTROL OF BACKFLOW AND CROSS-CONNECTIONS AND RELATED OPERATIONS OF THE BRAZIL PUBLIC WATER SYSTEM

WHEREAS, it is the purpose of this ordinance to protect the public potable water supply of Brazil, Indiana from the possibility of contamination or pollution due to cross connection hazards existing from commercial and industrial users, excluding single family dwellings, duplexes and fourplexes with individual water meters by isolating within the customer's internal distribution system(s) or the consumer's private water system(s) such contaminates or pollutants which could back flow into the public water systems;

WHEREAS, it is also the purpose of this ordinance to promote the elimination or control of existing cross-connection hazards, actual or potential, between the consumer's in-plant potable water system(s) and non-potable water system(s), plumbing fixtures and industrial piping systems;

WHEREAS, it is also the purpose of this ordinance to provide for the maintenance of a continuing Program of Cross-Connection Control which will systematically and effectively prevent the contamination or pollution of all potable water systems, and

WHEREAS, it is the intent of this ordinance to comply with rules pertaining to operation of a public water supply as outlined in 327 IAC 8-10, et seq.

NOW, THEREFORE, BE IT ORDAINED BY THE COMMON COUNCIL OF THE CITY OF BRAZIL, INDIANA THAT A NEW CHAPTER UNDER TITLE 5 WATER IS HEREBY ADDED AND SHALL READ AS FOLLOWS:

SECTION 1: Responsibility. The Brazil Water Works shall be responsible for the protection of the public potable water distribution system from contaminates or pollutants through the water service connection. If, in the judgment of said Brazil Water Works an approved backflow prevention assembly is required as defined by I.A.C., 327 IAC 8-10, Rule for the safety of the water system, Brazil Water Works shall give notice in writing by mail to said customer to install such an approved backflow prevention assembly(s) at specific consumer's own expense; and, failure, refusal or inability on the part of the customer to install, have tested and maintain said assembly(s) shall constitute a grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

SECTION 2: Definitions. For purposes of this chapter the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(A) **"Air-Gap"** means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing, fixture or other device and flood level rim of said vessel. An approved air-gap shall be at least double the diameter of the supply pipe, measured vertically, above the overflow rim of the vessel; and in no case less than one inch.

(B) **"Approved"** means accepted by the Brazil Water Works as meeting an applicable specification stated or cited in this ordinance, or as suitable for the proposed use.

(C) **"Auxiliary Water Supply"** means any water supply on or available to the premises other than the utility's approved public water supply. These auxiliary waters may include water from another utility's public potable water supply or any natural source(s) such as a well, spring, ricer, stream, etc., or "Used waters" or "Industrial fluids." These waters may be contaminated or polluted or they may be objectionable and constitute an unacceptable water source over which the water utility does not have sanitary control.

(D) **"Backflow"** means the reversal of the normal flow of water caused by either backpressure or backsiphonage.

(E) **"Backpressure"** means the flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source or sources other than the intended source.

(F) **"Backsiphonage"** means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply caused by the reduction of pressure in the potable water supply system.

(G) **"Backflow Preventer"** means an approved assembly or means designed to prevent backflow.

(H) **"Contamination"** means an impairment of the quality of the portable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which created an actual or potential hazard to the public health through poisoning or through the spread of disease.

(I) **"Cross-Connection"** means any physical connection or arrangement of piping or fixtures between two otherwise separate piping systems, one of which contains potable water and the other non-potable water or industrial fluids of questionable safety, through which, or because of which, backflow may occur into the potable water system.

(J) **"Cross-Connection control by Containment"** means the installation of an approved backflow prevention assembly at the water service connection to any customer's premises where actual or potential cross-connections within the customer's water system; or it shall mean the installation of an approved backflow prevention assembly on the service line leading to an supplying a portion of a customer's water system where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of the cross-connection.

(K) **"Cross-Connections Controlled"** means a connection between a potable water system and a non-potable water system with an air-gap or approved backflow prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

(L) **"Degree of Hazard"** means an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

(M) **"Double Check Valve Assembly"** means an assembly of two independently operating, approved check valves with resilient seated shut-off valves on each end of the check valves, plus properly located resilient seated test cocks for testing of each check valve. The entire assembly shall meet the design and performance specifications as determined by a laboratory and field evaluation program resulting in an approval by a recognized and Brazil Water Works approved testing agency for backflow prevention assemblies. To be approved these assemblies must be readily accessible for in-line testing and maintenance. Confined space installations will not be accepted.

(N) **"Health Hazard"** means any condition, device, or practice in the water supply system and its operation, which could create, or in the judgment of the Brazil Water Works, may create a danger to the health and well being of the water consumer.

(O) **"Industrial Fluids System"** means any system containing a fluid or solution, which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, system, pollutions or plumbing hazard if introduced into an approved water supply. This may include, but not be limited to: polluted or contaminated water; all types of process waters and "used water" originating from the public potable water system which may have deteriorated in sanitary quality; chemicals in fluid from; plating acids and alkalines, circulating cooling waters connected to an open cooling tower and/or cooling towers that are chemically or biologically treated or stabilized with toxic substance; contaminated natural waters such as from wells, springs, streams, rivers, irrigation canals or systems, etc.; oils, gases, glycerin, paraffin, caustic and acid solutions and other liquid and gaseous fluids used in industrial or other purposes or for fire-fighting purposes.

(P) **"Non Potable Water"** means water which is not safe for human consumption or which is of questionable potability.

(Q) **"Plumbing Hazard"** means a plumbing type cross-connection in a consumer's potable water system that has not been properly protected by an approved air-gap or approved backflow prevention assembly.

(R) **"Pollution"** means the presence of any foreign substance (organic, inorganic, or biological) in water which tends to degrade its quality so as to constitute a hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

(S) **"Pollutional Hazard"** means an actual or potential threat to the physical water system but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

(T) **"Potable Water"** means any water which, according to recognized standards, is safe for human consumption.

(U) **"Reduced Pressure Principal Assemblies"** means an assembly of two independently acting approved check valves together with a hydraulically operating, mechanically independent differential pressure relief valve located between the check valves and at the same time, below the first check valve, the unit shall include properly located resilient seated test cocks and resilient shut-off valves at each end of the assembly. The entire assembly shall meet the design and performance

specifications as determined by a laboratory and a field evaluation program resulting in an approval by a recognized and Brazil Water Works approved testing agency for backflow prevention assemblies. The assembly shall operate to maintain the pressure in the zone between the check valves at an acceptable level less than the pressure on the public water supply side of the assembly. At cessation of a normal flow the pressure between the two check valves shall be less than the pressure on the public water supply side of the assembly. In case of leakage of either of the check valves the differential relief valve shall operate to maintain the reduced pressure in the zone between the check valves by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere. To be approved these assemblies must be readily accessible for inline testing and maintenance and be installed in a location where no part of the assembly will be submerged. Confined space installations will not be approved.

(V) **"Superintendent"** means the Superintendent of the Water Department of the City of Brazil who is vested with the authority and responsibility for the implementation of an effective cross-connection control program and for the enforcement of the provisions of this ordinance.

(W) **"System Hazard"** means an actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

(X) **"Used Water"** means any water supplied by a Water Utility from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under the sanitary control of the Water Utility.

(Y) **"Water Service Connection"** means the terminal end of a service connection from the public potable water system; i.e., where the Water Utility loses jurisdiction and sanitary control over the water at its point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter is installed inside a building, then the Water Utility jurisdiction terminates at the downstream end of the outside shut off valve to the water service. There should be no unprotected takeoffs from the service line ahead of any meter or ahead of any backflow prevention assembly. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

SECTION 3: Water system requirements. The water system shall be considered as made up of two parts: The Utility System and the Customer System.

(A) The Utility System shall consist of the source facilities and the distribution system; and shall include all air-gaps or approved backflow prevention assemblies properly installed and components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system. The distribution system shall include the network of mains used for the delivery of water from the source to the customer's system.

(B) The Customer's System shall include those parts of the facilities beyond the termination of the utility distribution system which are utilized in conveying utility-delivered domestic water to points of use.

SECTION 4: Compliance. No water service connection to any premises shall be installed or maintained by the Brazil Water Works unless the water supply is protected as required by State rules and regulations of this Ordinance. Service of water to any premises by this Ordinance is not installed, tested and maintained, or if it is found that a backflow prevention assembly has been removed, bypassed, or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

SECTION 5: Inspection. The customer's system must be open for inspection at all reasonable times to authorized representatives of the Brazil Water Works to determine whether there exist cross-connections or other structural or sanitary hazards, including violations of this ordinance or regulations which are adopted through this ordinance.

SECTION 6: Discontinuance of Service. When a volatile condition becomes known, the Superintendent may deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with the State statutes and City ordinances relating to plumbing and water supplies and the regulations adopted pursuant thereto.

SECTION 7: Installation of back flow prevention assembly. An approved backflow prevention assembly shall as defined by the IDEM Rule IAC 8-10, also be installed on each service line to a customer's water system at or near the property line or immediately inside the building being serviced; but, in all cases, before the first branch line leading off the service line wherever the following conditions exist:

(A) In the case of premises having an auxiliary water supply which is not or may not be safe bacteriological or chemical quality and which is not acceptable as an additional source by the Brazil Water Works, the public water system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line appropriate to the degree of hazard;

(B) In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line appropriate to the degree of hazard. This shall include the handling of process waters and waters origination from the utility system which have been subject to deterioration in quality; and

(C) In the case of premises having (1) internal cross-connection that cannot be permanently corrected or controlled, or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises are not readily accessible for inspection purposes, making it impractical or impossible to ascertain whether or not dangerous cross-connections exist, the public water system shall be protected

against backflow from the premises by installing an approved backflow prevention assembly in the service line or lines where potential hazards could exist.

SECTION 8: Type of Protective Assembly. The type of protective assembly required shall depend upon the degree of hazard which exists as follows:

(A) In the case of any premises where there is an auxiliary water supply, the public water system shall be protected by an approved backflow prevention assembly as defined by the IDEM Rule 327 IAC 8-10;

(B) In the case of any premises where there is water or a substance that would be objectionable but not hazardous to health, if introduced into the public water system the public water system shall be protected by an approved double check valve assembly;

(C) In the case of any premises where there is any material dangerous to the health such as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly. Examples of premises where these conditions will exist include, but are not limited to sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries and planting plants;

(D) In the case of any premises where there are uncontrolled cross-connections, either actual or potential, the public water system shall be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly at the service connection;

(E) In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow from the premises by either an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly on each service to the premises; and

(F) In case of any premises having a lawn irrigation system, the public water system shall be protected by an approved pressure vacuum breaker backflow prevention assembly or an approved reduced pressure principle backflow prevention assembly.

SECTION 9: Approval of backflow prevention assembly. Any backflow prevention assembly required herein shall be a model and size approved by the Brazil Water Works. The term "Approved Backflow Prevention Assembly" shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association (AWWA) entitled "AWWA C506-84 Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Devices". Said assembly shall meet the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research (FCCC&HR) of the University of Southern California established by Specifications of Backflow Prevention Assemblies – Section 10 of the most current issue of the MANUAL OF CROSS-CONNECTION CONTROL. Final approval shall be evidenced by a Certificate of Approval issued by an approved testing laboratory certifying full compliance with the said AWWA standards and FCCC&HR specifications.

SECTION 10: Adoption of standards by reference. . The AWWA and FCCC&HR standard and specifications specifically referenced in (above section) are hereby adopted and incorporated herein by reference.

SECTION 11: Duty to test and repair. It shall be the duty of the customer-user at any premises where backflow prevention assemblies are installed to have certified inspections and operational tests made upon installations and at least once per year. In those instances where the Brazil Water Works Superintendent deems the hazard to be great enough, the Superintendent may require certified inspections at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by a certified tester approved by the State of Indiana and the Brazil Water Works. It shall be the duty of the Brazil Water Works to see that these tests are made in a timely manner. If a customer-user does not have its backflow prevention assembly tested within thirty (30) days of notification, Brazil Water Works may discontinue water service to the premises to maintain the safety of the public water system. These assemblies shall be repaired, overhauled or replaced at the expense of the customer-user whenever said assemblies are found to be defective. Records of such tests, repairs and over haul shall be kept and made available to the Brazil Water Works.

SECTION 12: Exemptions. All presently installed backflow prevention assemblies which do not meet the requirements of this section that were approved devices for the purposes described herein at the time of installation and which have been properly maintained, shall be excluded from the requirement of these rules so long as the Brazil Water Works is assured that they will satisfactorily protect the utility system. However, whenever the existing device is moved from the present location, fails testing or requires more than minimum maintenance or when the Brazil Water Works finds that the assembly or its maintenance constitutes a hazard to health, the unit shall be replaced, at the consumer's expense, by an approved backflow prevention assembly meeting the requirement of this section.

SECTION 13: Certification of testers. Certified testers shall be listed with the Brazil Water Works and shall provide proof of six (6) contact house annually of approved continuing education to the Brazil Water Works. In addition, certified testers will provide proof that test gauges used in testing backflow prevention assemblies have been calibrated and certified annually.

SECTION 14: Penalty. Whoever violates any provision of this chapter for which no other penalty is otherwise specifically provided shall be fined not more than $1,000.00. A separate offense shall be deemed committed on each day that a violation occurs or continues.

SECTION 15: Repeal of Conflicting Ordinances. All Ordinances, or any parts thereof, previously enacted which are in conflict with this Ordinance are hereby repealed.

SECTION 16: Time of Effect. This Ordinance shall be in full force and effect from and after its passage, when it is signed by the presiding officer, approved by the Mayor, and published as required by law.